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Report to the Secretary of Defense

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DEPLOYMENT

Authority Issues Affect Joint System Development

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United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

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July 23, 1986

The Honorable Caspar W. Weinberger
The Secretary of Defense

Dear Mr. Secretary.

The Joint Deployment Agency (JDA) was established by the Joint Chiefs of Staff in 1979 to (1) coordinate and monitor the planning for and actual deployment of U.S. forces and (2) develop, by the end of fiscal year 1985, an operational joint deployment system to provide the information needed to effectively manage the deployment process. Through fiscal year 1984, JDA had spent about $42.3 million to develop the system, referred to as the Joint Deployment System (JDS), and total development costs for all joint deployment community members,[1] including JDA, are projected to be $171.1 million through 1991.

Our objectives were to (1) determine whether JDA had adequately identified the needs and requirements for an effective deployment coordination system and (2) evaluate progress in implementing the system.

JDA's efforts to develop JDS have improved peacetime planning and management visibility over deployment activities. Among its contributions, JDA has been promoting coordination between community members by hosting conferences to refine operation plans. JDA also periodically coordinates updating these operation plans. Additionally, during deployment exercises, JDA has been monitoring and reporting force movements, providing the community a focal point for deployment information.

However, JDS will not be fully operational until at least 1989. Also, we believe it may not achieve its planned level of operational capability unless certain management improvements are made. Two key problems affecting JDS development are the community's lack of agreement on total information needs and delays in the development of three automated planning systems which are to provide JDS with transportation information. Additional problems, such as the speed and accuracy of certain existing information systems, are discussed in the appendix.

[1]The Joint Deployment Community (referred to collectively in this report as the "community") consists of those headquarters, commands, and agencies involved in preparation, movement, reception, employment, support, and sustainment of military forces assigned or committed to a specific operation plan. The community usually consists of the Organization of the Joint Chiefs of Staff, the services, certain service logistics commands, the Defense Logistics Agency, the transportation operating agencies, JDA, and other Department of Defense (DOD) agencies as may be appropriate to a given operation plan.

Background

Deployment planning is a complex process involving the services and defense agencies which support the National Command Authorities (NCA), i.e., the President and the Secretary of Defense. In a crisis, planning must be done quickly to ensure that U.S. forces are mobilized and deployed in time to safeguard our national interests. Before JDA, no DOD agency existed to coordinate the flow of information from and between community members to help ensure effective mobilization and deployment decisions. JDA was established to enhance deployment planning by providing the data required by the community and to coordinate and monitor deployment during execution. For example, JDA must ensure that the supported commander's personnel and equipment needs are input into JDS. DOD's three transportation operating agencies (TOAs) need that information in JDS so they can produce movement schedules which allow decisionmakers to determine if troops and materiel can be moved to specific locations when needed and if not, to identify transportation shortfalls which must be addressed prior to deployment.

JDS was developed to operate with other automated systems thereby providing the link between peacetime planning and crisis planning and execution. Through JDS, JDA provides information to supported commanders, and the other community members, for use in developing alternative crisis response plans. Information is also provided to the Joint Chiefs of Staff for evaluating the alternatives before submitting their selection to the NCA for final decision. Once NCA selects a response, the President issues an execute order to the Secretary of Defense who, in turn, directs the operations of the supported commander through the Joint Chiefs of Staff.

No Agreement on Total Information Needs

JDA has not obtained community agreement on what information should be included in JDS or how JDS will interface with or obtain information from other systems. DOD automated data systems documentation standards require that before system development begins, a functional description be written to establish a "basis for mutual understanding" between the group developing the system and its users. The description is also intended to define what data are to be included in the system and clearly state what the system is intended to do. However, system development was initiated without an approved functional description. An approved functional description was not agreed to by the community until April 1985, about 5 years into JDS development. However, the description does not establish a basis for mutual understanding within the deployment community on total information needed. Disagreement

still exists on the level of detail the system should contain. The functional description also does not reflect agreement on which systems will be interfaced with JDS. Rather, it states that JDS information needs vary by user and that there is no consensus within the community on the level of detail required in the system.

The functional description identifies 14 community information systems to be interfaced with JDS. JDS currently has an interface with only 6 of the 14. JDA was able to obtain an agreement to test an interface with two of the remaining eight, and the other six systems are either still being developed or are being updated. Four of the latter six are not scheduled to be completed for at least another 2 to 3 years. The functional description also recognizes that as community deployment-related systems are improved or new ones developed, interfaces with JDS will be required to improve the accuracy and timeliness of the JDS data base. Thus, all interfaces which were not agreed to or operating when the functional description was approved will be addressed as JDS system enhancements and, as such, must go back through the community for approval.

Delays in Developing Transportation Information Systems

Key automated planning systems being developed by two of the three TOAS are in the early stages of system design and will not be able to provide timely and accurate information to JDS in crises, when transportation plans must be revised or developed quickly, until at least 1989. This situation exists largely because of delays in their development brought about by congressional actions and debates over consolidation of the TOAS, which resulted in a DOD restriction on developing the Military Sealift Command (MSC) and the Military Traffic Management Command (MTMC) automated planning systems. MTMC was allowed to resume development of its system in August 1983. MSC was allowed to proceed in January 1985 when DOD concluded that MTMC and MSC would not be consolidated.

Lack of Authority Adds to Problems

Compounding JDA's problems in developing JDS is its lack of authority to direct community members to take actions to support JDS development. As a "coordinating authority" for the Joint Chiefs, JDA can require consultation between the services on particular deployment coordination issues but cannot direct other services, agencies, or commands to take the actions necessary to complete JDS. Thus, although JDA is responsible for JDS development, it must rely on community cooperation to resolve disagreements, develop needed automated systems, and interface systems JDA believes are essential to the operation of JDS. The reluctance of

community members to allow interface between their data systems and JDS could be particularly difficult to resolve as some community members perceive JDA's involvement and use of data from members' systems as an encroachment on the chain of command.

New System Will Build on JDS

The successful and timely resolution of JDS' problems is important not only for the completion of JDS but also for the development of another automated joint system, the Joint Operation Planning and Execution System (JOPES). This system will build on and eventually replace JDS.

JOPES' development is not managed by JDA. It is being directed and coordinated by the JOPES Management Division within the Operations Directorate of the Organization of the Joint Chiefs of Staff. JDA provides a project group to support the JOPES Management Division in collecting, developing, and integrating JOPES user requirements.

In July 1983, the Joint Chiefs of Staff approved the Required Operational Capabilities statement for the development of JOPES as a comprehensive automated system to monitor all four phases of military operations—mobilization, deployment, force employment, and sustainment. JOPES will initially build on JDS' capabilities to further enhance deployment planning and execution functions. In addition, JOPES will incorporate automated capabilities to provide more timely and accurate decisionmaking information relative to mobilizing troops, employing them in conflicts, and sustaining their operations with required supplies and equipment. Work is now under way on JOPES' definition and design. JOPES is planned to begin operation as early as 1989 and is expected to be fully functional in the 1990's.

Conclusions

JDA has taken actions to improve the nation's ability to plan for deployment during a crisis. Effective completion of an automated deployment information system, such as JDS, is critical to providing decisionmaking information to the supported community, the Joint Chiefs of Staff, and the NCA during a crisis. JDS has not achieved the capability to allow commanders to quickly develop and select feasible courses of action for mobilizing troops for deployment to a conflict area in a sudden crisis for which no contingency plan exists. JDS cannot be completed until the community resolves disagreements on the information to be provided to and by the system and makes other improvements discussed in the appendix.

Because the Joint Chiefs of Staff lack authority to (1) resolve disagreements among community members and (2) require actions which support JDS development, we believe that increased involvement by the Office of the Secretary of Defense, including specific guidance and direction, is now critical. This guidance and direction is needed to (1) resolve community disputes over the information to be provided to and by JDS, and (2) ensure that the capabilities needed by the community are completed in a timely manner. Such guidance should include specific time frames when agreements must be reached and actions taken.

Recommendations

To ensure that the disagreements between community members on information which a deployment system, such as JDS, should provide and system interfaces are resolved at the earliest possible time, we recommend that the Secretary of Defense take the following action:

- Require the ultimate users, the Joint Chiefs of Staff and the supported commanders, to establish firm milestones for agreement on the level of detail to be included in the system and completion of the interfaces needed for the system.
- Require JCS and JDA to report to OSD at the earliest reasonable time any disagreements or lack of cooperation from community members which could affect JDA's capability to meet the milestones established.
- Provide for follow-up actions to ensure appropriate resolution of the issue.

Agency Comments

DOD's comments are included in appendix II, and were incorporated into this report where appropriate.

DOD concurred, either totally or partially, with our findings except in two areas. DOD did not agree that the problems encountered by JDA in developing JDS were caused by a lack of authority, nor did it believe that problems in JDS implementation would likely be repeated in the implementation of JOPES. DOD believes the cause is a lack of detailed requirement statements against which to develop specific interfaces. However, we continue to believe that the Joint Chiefs' and JDA's lack of authority to resolve disagreements has adversely affected JDS development. Our report documents lack of cooperation and questions related to the effect on the chain of command of providing certain information to JDS. This is more than a lack of detailed requirements for the system. Further, the issue of inadequate authority has the potential to continue to affect system development.

Concerning JOPES, we modified our report to eliminate any inference that JDS problems would likely be repeated. Our Information Management and Technology Division is currently reviewing DOD's Worldwide Military Command and Control System, of which JOPES is to be a part, and will be following its progress.

As you know, 31 U.S.C. 720 requires the head of a federal agency to submit a written statement of actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report. A written statement must also be submitted to the House and Senate Committees on Appropriations with an agency's first request for appropriations made more than 60 days after the date of the report.

Copies of this report are being sent to the House and Senate Committees on Appropriations and Armed Services. Copies will also be made available to others upon request.

Sincerely yours,

Frank C. Conahan

Frank C. Conahan
Director

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Abbreviations

ASPUR	Automated System for Processing Unit Requirements
COMPASS	Computerized Movement Planning and Status System
DOD	Department of Defense
JDA	Joint Deployment Agency
JDS	Joint Deployment System
JOPES	Joint Operation Planning and Execution System
JOPS	Joint Operation Planning System
MAC	Military Airlift Command
MAIRS	Military Air Integrated Reporting System
MODES	Mode Optimization and Delivery Estimation System
MRA&L	Manpower, Reserve Affairs and Logistics
MSC	Military Sealift Command
MTMC	Military Traffic Management Command
NCA	National Command Authorities
TC ACCIS	Transportation Coordinator Automated Command and Control Information System
TOA	Transportation Operating Agency
WWMCCS	Worldwide Military Command and Control System

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Deployment: Authority Issues Affect Joint System Development

Background

Managing military deployments is a complex task due largely to the number of participating headquarters and agencies needed to support the National Command Authorities (NCA)—the President and the Secretary of Defense. Supporting commands and agencies, such as the U.S. Army Forces Command and the Defense Logistics Agency, supply troops and materiel to the commander responsible for activities in the area where a crisis is imminent or is occurring. Getting troops and materiel to the area requires the services of the three transportation operating agencies (TOAs)—the Military Airlift Command (MAC), the Military Sealift Command (MSC), and the Military Traffic Management Command (MTMC). All these activities must be clearly coordinated and properly time phased to ensure that personnel, materiel, and equipment arrive when and where needed to protect our national interests. The Joint Chiefs of Staff have general responsibility to oversee the deployment process but do not have line authority to select an alternative for addressing a crisis or to direct field operations.

The Joint Chiefs of Staff established the Joint Deployment Agency (JDA) in March 1979 to better ensure that the United States could successfully deploy troops and equipment in a crisis. Before JDA, no Department of Defense (DOD) agency existed in peacetime with this function. JDA's role is to (1) coordinate and monitor the planning for and actual deployment of U.S. forces, and (2) develop an operational Joint Deployment System (JDS) to provide the information needed to effectively manage the deployment process.

Many mobilization exercise evaluations and transportation studies, as well as historical experience, have pointed out the need for a centralized agency from which the deployment of U.S. forces could be coordinated and managed. JDA was established in direct response to the problems identified in NIFTY NUGGET, a large joint mobilization and deployment exercise conducted in the fall of 1978. The exercise disclosed a number of basic problems, including

- insufficient ability to coordinate the plans for using transportation resources;
- inadequate collection of the information needed for decisionmaking by deployment participants; and
- inadequate automatic data processing capability to support the participants' information needs within the necessary timeframes.

During both the planning and execution phases of deployment, JDS will serve as a management information link between the Joint Deployment

Community—the Joint Chiefs of Staff, the field commanders, the services, the TOAs, and other defense agencies—by providing data required and by monitoring the actual deployment. For example, by accessing data banks and management information systems maintained by the services, TOAs, and logistics agencies, JDS should provide information such as

- unit readiness, required deployment dates, and movement priorities;
- lift requirements/capabilities; and
- status of critical items.

The ready availability of such information is particularly important in crises for which an operation plan has not been prepared or when major revisions to an existing plan are required. As opposed to the peacetime, or "deliberate" planning process for which months are available for preparation, there may be only a few days or even hours available in a crisis to develop a viable course of action. JDA, through use of the JDS, is intended to enhance the current peacetime planning ability, as well as provide the automated capability to rapidly prepare a viable operation plan during crises.

JDS Intended to Coordinate Deployment Information

JDS is the deployment information system being established to provide the timely flow of deployment data, both laterally and vertically, within the deployment community. In December 1984, the Mitre Corporation, a systems engineering firm on contract to JDA to help develop JDS, estimated that JDS' life cycle cost would be about $171.1 million. This life cycle extends from fiscal year 1980, when JDS software development began, through fiscal year 1991, the date JDS functions are expected to be integrated into a larger follow-on system. (See p. 12.) The life cycle cost estimate includes $42.3 million expended by JDA in fiscal years 1980-84 (the latest available data), $74.1 million it expects to spend in fiscal years 1985-91, and $54.7 million it expects other members of the joint deployment community will have spent during fiscal years 1980-91.

JDS consists of a complicated network of people, procedures, communication capabilities, and automatic data processing equipment to support deployment planning and execution. It is part of the Worldwide Military Command and Control System (WWMCCS) and is designed to interface with other automated systems to obtain the summary and detailed data necessary to provide the supported commanders and the Joint Chiefs of

Staff decisionmaking information for planning, coordinating, and monitoring troop deployments.

JDS complements the existing peacetime planning system—the Joint Operation Planning System (JOPS). JDS provides the ability to more quickly refine operation plans developed in JOPS and, more importantly, should provide the information needed by decisionmakers to develop plans in situations where none exist. In addition, JDS directly supports deployment execution—a function which JOPS is not designed to perform. In accordance with the guidance of the Joint Chiefs of Staff and the supported commanders, directions to implement deployment decisions will be transmitted through JDS. JDS will also provide a single source of information for commands and agencies supporting the deployment; provide movement status on the deployment of forces and materiel; and adjust movement plans, schedules, and modes of transport.

It is anticipated that at some time in the 1990's JDS will be absorbed into, and then replaced by, an even more comprehensive system, referred to as the Joint Operation Planning and Execution System (JOPES). JOPES' development is not managed by JDA. It is being directed and coordinated by the JOPES Management Division within the Operations Directorate of the Organization of the Joint Chiefs of Staff. JDA provides a project group to support the JOPES Management Division in collecting, developing, and integrating JOPES user requirements.

JOPES is being developed to monitor all four phases of joint military operations—mobilization, deployment, force employment, and sustainment. JOPES will initially build on JDS' capabilities to further enhance deployment planning and execution functions. For example, JOPES is planned to have the ability to interface with U.S. Allies' systems to permit accurate assessments of combined capabilities to conduct operations; JDS provides decisionmaking information related to U.S. force deployment only.

The JDS data base at JDA consists of deployment data needed for worldwide deployment coordination. Several other sites, such as the National Military Command Center, MAC, and MTMC, have virtual duplicates of the JDS data base at JDA to provide backup capability. Portions of the JDS computer data base are also located at other major military sites throughout the world. All these sites have identical data base structures, but the data in their systems are tailored to deployment plans and responsibilities for their particular locations. The overall system is

designed so that when one JDS data base is updated, appropriate JDS data bases at other sites are automatically updated.

According to JDA, JDS should be linked, or interfaced, with many different service systems. But the capability to automatically exchange information between community members varies considerably by site, since some systems have been completed while others are still under development. (See p. 19.)

JDA Strengthened and JDS Development Accelerated

When originally established, JDA's role as a coordinating authority was limited primarily to coordinating and disseminating deployment information. To accomplish this, JDA was to develop a centralized automated planning system--JDS. However, congressional recommendations to consolidate the DOD's traffic management functions into a single organization resulted in an expansion of JDA's role and an acceleration of JDS' implementation schedule.

In December 1980, the conference report accompanying the 1981 DOD Appropriations Act (Public Law 96-527) required DOD to prepare a plan to establish a unified military traffic management agency or command to better coordinate troop movements. In September 1982, the 1983 DOD Authorization Act (Public Law 97-252) prohibited establishing this command. The conference report on the act encouraged the Secretary of Defense to submit legislative proposals to enhance operations of the transportation commands. Furthermore, the report requested the Secretary to take necessary measures to improve the communication and information systems that interact between the transportation commands. In response, the Deputy Secretary of Defense, in June 1981, directed that the Joint Chiefs redefine and strengthen JDA's role in coordinating the activities of the transportation agencies during deployments.

In response to the Deputy Secretary of Defense's request, the Joint Chiefs, in October 1981

- designated JDA as the focal point for deployment-associated decision-making information,
- expanded JDA's charter in several phases of deployment planning and execution, and
- specified certain JDS system enhancements to be achieved for the system to be considered fully operational.

Among the system enhancements mentioned above, the Joint Chiefs specified that JDS must include the ability to (1) automatically interface with the TOAs and other commands, (2) quickly develop a course of action in situations where no plan exists, (3) monitor critical resupply, and (4) coordinate and monitor the return of evacuated personnel. These enhancements, as well as several others, were to be completed by the end of fiscal year 1987, the time specified for JDS to be fully operational.

The Deputy Secretary of Defense agreed that the Joint Chief's actions to strengthen JDA should resolve many of the past deployment coordination problems. However, he further requested that the Joint Chiefs determine how JDS' full operation could be achieved earlier than planned. The Joint Chiefs of Staff subsequently identified personnel and funding needed for fiscal years 1983 and 1984 to allow JDS to achieve "full operational capability" by the end of fiscal year 1985—2 years earlier than the originally planned fiscal year 1987 completion date.

The Deputy Secretary approved the accelerated plan in a letter dated December 16, 1982, and informed the Joint Staff of his actions to provide the resources identified. In the letter, he referred to the House-Senate conference report on the DOD Authorization Act, 1983, and identified JDS as "the principal system under development that requires extensive communication and information systems interaction between the transportation commands." To emphasize the importance of JDA in responding to the congressional concerns, he added that he expected the Joint Chiefs of Staff and the services to ensure that the deployment system would be implemented jointly by the TOAs in full coordination with JDA.

Objectives, Scope, and Methodology

Our objectives were to (1) determine whether JDA had adequately identified the needs and requirements for an effective deployment coordination system and (2) evaluate progress in implementing the system. During our work, we also obtained information on the status of JOPES development. However, we did not evaluate the need for JOPES. Our work was performed from October 1984 to November 1985.

Although our work was centered at JDA, we also performed work at the following locations:

- Office of the Secretary of Defense,
- Organization of the Joint Chiefs of Staff;
- Headquarters, Military Airlift Command;

- Headquarters, Military Sealift Command;
- Headquarters, Military Traffic Management Command;
- Headquarters, U.S. Army Forces Command;
- Headquarters, U.S. Army Materiel Command;
- Headquarters, Defense Logistics Agency;
- Headquarters, Department of the Army;
- Headquarters, Department of the Air Force;
- Headquarters, U.S. Marine Corps;
- Headquarters, U.S. Central Command; and
- Headquarters, U.S. Atlantic Command.

At each organization, we met with officials and reviewed documents to determine (1) each command's involvement in developing JDS, (2) the problems each had experienced or foresaw, and (3) the accomplishments of the system to date. We obtained and analyzed evaluation reports of exercises involving JDS to further identify accomplishments and problems.

At JDA, we reviewed documentation relating to its responsibilities, such as JDA's Terms of Reference (JDA's chartering document), Concept Description, and JDS functional descriptions, as well as specialized studies, issue papers, and correspondence. We also met with personnel at all echelons to obtain information on JDS' implementation status.

While we did review and discuss system requirements, personnel needs, and training issues with community members, we did not evaluate

- computer and communications support for JDS,
- system requirements or determine what information JDS should provide to decisionmakers,
- the community members' ability to operate JDS within their current computer storage capacities,
- the level of or need for personnel to support JDS in the community, or
- the adequacy of the JDS training program.

Our review was made in accordance with generally accepted government auditing standards, with the exception that we did not verify the accuracy of data obtained from computer systems because the data's accuracy was not central to the report's conclusions and recommendations.

JDS Will Not Be Fully Operational for Several Years

JDS will not be fully operational until at least 1989, when TOA crisis planning systems are scheduled to be completed. Consequently, JDA is not and will not be able to fully coordinate and monitor deployment planning and execution or provide complete and accurate decisionmaking information as planned by the end of fiscal year 1985. JDA's progress in developing JDS has (1) improved peacetime planning capabilities by promoting coordination between community members and keeping operation plans current through periodic updates and (2) improved management's visibility over deployment activities by monitoring force movements during peacetime exercises and providing the deployment community a focal point for deployment information. However, the following problems remain:

- Community members have not agreed on the total information needs of the system or how that information will be provided to JDS.
- JDS currently interfaces with 6 of the 14 systems JDA identified as requiring an interface to support deployment planning and execution. Three of the six are slow or provide inaccurate or noncurrent data, and six of the remaining eight systems have not been fully developed.
- Two of the three TOAs are still in the early stages of automated planning system design and will not be able to provide timely and accurate information to JDS in crises, when transportation plans must be revised or developed quickly, until at least 1989. This problem exists largely because of restrictions placed on TOA system development in 1981 by DOD in response to a congressional report.
- JDS does not have the full capability to allow commanders to quickly develop, revise, evaluate, and select an appropriate course of action for mobilizing troops and moving troops to an area of conflict in a situation where no existing plan will suffice because certain subsystems supporting this effort are not complete.
- Capabilities have not been developed to refine supply requirements and monitor critical resupply or to coordinate and monitor return of casualties and noncombatants.

Compounding JDA's problems in developing JDS is its lack of authority to direct community members to take actions to support JDS development. JDA has no authority to either resolve disagreements on JDS' requirements or ensure that the community has adequate computer capacity, personnel, and training for JDS to function properly. Thus, although JDA is responsible for JDS development, it must rely on community cooperation to resolve these issues.

No Community-Wide Agreement Exists on Total Information Needs

JDA did not obtain early agreement on total information needs as required by DOD standards for automated data system development. An overall list of what JDS was intended to do was outlined in JDA's chartering document, but this list was broad and was interpreted differently by community members. In April 1985—about 5 years into systems development—the community agreed to a functional description of what information JDS is intended to provide to the community and a list of 14 systems which are to eventually be interfaced with JDS. Even now, disagreements remain on just how much information JDS should receive from the community and their supporting systems and how those systems' proprietors will provide that data to JDS.

DOD's own automated data systems documentation standards require that a functional description be developed prior to beginning actual system design and development. This functional description should establish a basis for mutual understanding between the system's developers and its users. It should define what data are to be included in the system and clearly state what the system is intended to do. Prior to designing and developing the system however, no mutual understanding existed among the users on what specific data were needed in the system or on which systems were to be interfaced with JDS.

Early versions of the functional description were not approved, at least in part, due to community concerns over how much detail should be in the system. The functional description approved in April 1985 recognizes that JDS information needs vary by user and that consequently there is still no consensus within the community on the level of detail required in or through the system. The approved functional description states that the system will contain information at a level of detail which is currently in automated systems within the community. However, this does not meet DOD's requirement to obtain early agreement on total information needs.

For example, the JDS functional description does not state what specific level of detail is needed by decisionmakers in a complete joint deployment system nor does it establish an agreement with community members to provide that data to JDS when they are available. Among other information, the functional description identifies four levels of detail which describe a unit's passenger and cargo movement requirements, with each level including more specific information. The levels identified are as follows:

- Aggregated—This level identifies total numbers of passengers, short tons, and measurement tons to be moved.
- Summary—This level states the total numbers of passengers, as well as total short tons and measurement tons of bulk cargo—cargo which is too large or heavy to be transported by air, etc.
- Detail by Category—This level further identifies cargo information by total square feet, short tons, measurement tons, etc., by the type of cargo, i.e., tracked vehicles, wheeled vehicles, refrigerated items, etc.
- Detail by Type of Equipment—This level provides category, equipment dimensions and total short tons, measurement tons, etc., for cargo by line item number.

Since some of the community's current automated systems can support only the second level of detail (summary information) during crisis planning and execution, the functional description states that the community will provide summary level information. Any requirement to provide more detailed information, according to the functional description, will be addressed as a JDS system enhancement and must, therefore, go back through the community for approval.

Detailed information by category or type of equipment is considered critical to crisis planning and execution by some supported commanders because that level of information more clearly identifies the quantities and types of equipment which the supporting commander must provide and reduces the possibility that overgeneralized conclusions will be made on the ability to transport that equipment to the crisis area. Additionally, detailed information by type of equipment is needed by supported commanders so they can plan for receipt and onward movement of units arriving in the crisis area.

Current efforts within the Logistics Directorate of the Organization of the Joint Chiefs of Staff to gain community agreement on the transportation information to be provided to JDS by the services indicate that the approved functional description did not establish a mutual understanding on JDS' total information needs. A document circulated to the community by the Logistics Directorate listed the information which each community member would be required to develop in order to provide accurate and timely data to JDS. Comments received from the community question the level of detail to be provided by their individual transportation movement systems, the need to report all unit and cargo movements rather than to report only movements which deviate from established schedules, and the way the individual systems would be interfaced with JDS.

The functional description also recognizes that as community deployment-related systems are improved or new ones developed, future interfaces with JDS will be required to improve the accuracy and timeliness of the JDS data base and to support maintaining more detailed information on troop and cargo movements. It states that several of these systems are not sufficiently developed to allow interface specifications to be developed. These system interfaces will be addressed as JDS system enhancements and, therefore, will have to go back through the community for approval.

Automated System Interfaces Are Needed to Obtain Accurate and Timely Data

JDA officials identified 14 major community systems which they believed needed to be interfaced with JDS. However, JDS currently has interface with only 6 of the 14. JDA was able to obtain an agreement to test an interface with the proprietor of two of the remaining eight. The other six systems are either still being developed or are being updated; four of these are not scheduled to be completed for at least another 2 to 3 years.

Of those six systems which currently provide information to JDS, three are acknowledged by system owners and/or users to be slow, inaccurate, and/or not current. For example, the Standard Reference Files, used to identify such things as port-handling capacities, lift capability, and total lift assets, are said by users to be incomplete and generally outdated.

Table I.1 shows each of the 14 systems which have been identified by JDA for interface with JDS, together with its owner, the type of information it provides, the status of its interface with JDS, and known system problems.

Table I.1: Systems Identified by JDA for Interface With JDS

System name	Service/ proprietor	Information provided	Data use	Status of interface	Comments
Joint Operation Planning System	Joint	Time-phased force deployment data for specific operation plans	Peacetime planning	Interfaced	
Standard Reference Files	Joint	Standard information, such as port-handling and movement characteristics and lift capabilities	Peacetime and time-sensitive planning	Interfaced	According to users, files are unreliable, incomplete, and generally outdated; updates are in progress
Unit Status and Identity Report	Joint	Organizational resource availability	Peacetime and time-sensitive planning	Interfaced	
Transportation Coordinator Automated Command and Control Information System	Army	Actual unit movement requirements of Army units	Time- sensitive planning; deployment execution	Will be addressed as a system enhancement	
Deployment, Employment, Mobilization Status System	Army	Forces Command units available for mobilization	Time- sensitive planning; deployment execution	Interfaced	
Computerized Movement Planning and Status System	Army	Detailed unit information, i.e., equipment authorized/ characteristics	Operational planning; deployment	Interfaced	System proprietors consider accuracy poor; information is generally 6-9 months old
Contingency Operation Mobility Execution System	Air Force	Specific units to fit requirements of operation plan and personnel and equipment for each unit	Peacetime and time-sensitive planning	Developed but not interfaced	Air Force has agreed to test an interface with JDS
Marine Corps Air Ground Task Force Lift Model II	Marine	Computes notional and real lift requirements. Aids in creating and updating time-phased requirements	Peacetime and execution planning	Will be addressed as a system enhancement	System being updated; completion expected in 1989
Flow Generator System	Air Force (MAC)	Assignment and scheduling of aircraft against movement requirements at summary level	Operation planning	Interfaced	Information must be manually refined to improve accuracy; system is slow, requiring 72-hour lead-time
Military Air Integrated Reporting System	Air Force (MAC)	Actual movements and aircraft status	Deployment execution	Developed but not permanently interfaced	MAC has agreed to test an interface during exercises; decision will be made after analysis of test results
Sealift Strategic Planning System	Navy (MSC)	Prioritizes use of ships and prepares ship movement schedules; identifies feasibility of various options	Peacetime and time-sensitive planning	Will be addressed as a system enhancement	System under development; scheduled for completion in 1988
Crisis Management Support Subsystem	Navy (MSC)	Develops responses to warning and threat assessments; selects options; reconstitutes/ redirects forces during contingency	Time- sensitive planning; deployment execution	Will be addressed as a system enhancement	System under development; prototype scheduled for completion in 1988

System name	Service/ proprietor	Information provided	Data use	Status of interface	Comments
Automated System for Processing Unit Requirements	Army (MTMC)	Schedules and manifests	Deployment execution	System under development, only one-way interface established	System can pull information from JDS, but further development required before it provides information to JDS
Crisis Action Management System	Army (MTMC)	Movement requirements and schedules during course of action development	Execution planning, deployment execution	Will be addressed as a system enhancement	System under development, two modules to support JDS scheduled for completion in fiscal years 1989 and 1990

Delays in Developing TOA Systems

Two of the three TOAs are in the early stages of system design, and will not be able to provide timely and accurate information to JDS in crisis situations, where transportation plans must be revised or developed quickly, until at least 1989. This situation exists largely because of delays in their development brought about by congressional actions and debates over consolidation of the TOAs. As a result of congressional actions and debates, the Acting Assistant Secretary of Defense for Manpower, Reserve Affairs and Logistics (MRA&L), restricted development of the MTMC and MSC automated planning systems.

In December 1981, in response to a conference report accompanying the 1981 DOD Appropriations Act, the Acting Assistant Secretary of Defense (MRA&L) directed that MSC and MTMC not develop or improve their automated planning systems until DOD determined if the surface movement responsibilities of those commands should be consolidated. While DOD was studying the feasibility of this consolidation, the Congress passed the 1983 DOD Authorization Act prohibiting DOD from consolidating any TOA functions. However, the conference report accompanying that act also (1) directed the Secretary of Defense to take necessary measures to improve the communication and information systems that interact between the transportation commands and (2) encouraged him to submit legislative proposals for enhancing the operations of those commands. Subsequently, the Deputy Secretary of Defense, in a December 1982 memorandum to the Joint Chiefs of Staff, stated that JDS was the principal system being developed to improve communications between the TOAs and approved funds and personnel increases to support development of JDS. However, DOD was still considering legislative proposals for consolidation of the TOAs as a way to enhance transportation operations and did not rescind the 1981 directive at that time.

In August 1983, MTMC was allowed to resume development of its automated system to support crisis planning because MTMC's capability to schedule commercial movements within the United States would be required, regardless of whether any consolidation of MTMC and MSC took place. However, since development of ship movement tables was a function being considered for consolidation within a new transportation command and, as such, would potentially be added to the automated crisis planning system being developed by MTMC, MSC was prohibited from proceeding with its system development until January 1985, when DOD concluded that MTMC and MSC would not be consolidated. Consequently, two of the TOAs are still in the early stages of system design and will not be able to provide timely and accurate information to JDS in crises, when transportation plans must be revised or developed quickly until at least 1989. (See table I.1.)

Commanders May Not Be Able to Rapidly Develop Courses of Action During Crises

In unexpected conflicts for which no appropriate operation plan has been prepared, JDS is intended to enable the supported commander to quickly create, revise, evaluate, and select a course of action. To do this, JDA is developing what it calls a "rapid deployment planning" capability. Two subsystems being developed to support this capability are the Force Module Subsystem and the Mode Optimization and Delivery Estimation System (MODES) model. JDA has made progress in developing these two subsystems. However, the subsystems will not be fully capable of supporting crisis planning until (1) all services complete their force modules and (2) MODES is fully operational and field tested.

A force module is a grouping of either (1) a specific combat unit with its associated support, or (2) a type of unit with its associated support. The concept for creating force modules was designed by the Joint Staff to increase the speed and flexibility of joint operation planning by linking combat units in advance with their combat support, combat service support, and sustainment needed for particular types of missions. Force modules are built by the individual services and are entered and maintained within the Force Module Library, contained both in JOPS and in JDS.

JDA neither builds these force modules nor provides data for the library. JDA will use the modules in its Force Module Subsystem to permit a supported commander to create new plans quickly or to rapidly tailor other operation plans to his needs.

The services have made much progress in establishing force modules but have not yet developed all the modules needed. They are now developing the additional modules needed with the tentative completion date of September 30, 1986.

The second subsystem, MODES, is intended to be used in a crisis to (1) provide estimates when troops and equipment will arrive at their destinations, (2) determine appropriate airlift and sealift allocations when multiple operation plans must be executed concurrently, (3) assist deployment planners by suggesting optimal transportation modes and ports of embarkation and debarkation to satisfy movement requirements, and (4) analyze the effectiveness of transportation resource use.

According to a JDA official, technical difficulties in completing the project have caused the subsystem's operational test and evaluation to be postponed until late 1986.

Monitoring Critical Resupply Needs

During a deployment, it is important to ensure that critical items necessary to support operations are identified and can be moved quickly to where they are needed. JDA has discussed requirements for identifying and monitoring resupplies with the service logistics agencies, the Defense Logistics Agency, and members of the deployment community in general but has reached no agreement about what information is needed or how to obtain it. Yet, since all troop and cargo movements are competing for the same transportation resources, agreement and coordination is critical to ensure that the most important demands are met.

Operating logistics systems contain data which JDA believes can provide needed cargo information, but these systems are not compatible with JDS. For example, two military standard logistics systems maintain records on supply requisitions and movement. The Military Standard Requisitioning and Issue Procedures, the requisitioning system, uses National Stock Numbers to identify items, while the Military Standard Transportation and Movement Procedures, the transportation system, uses water or air commodity codes. JDS, on the other hand, maintains cargo information either by cargo category code or by supply class code. These codes are not interchangeable and, consequently, are not easily transferable between systems. According to DOD comments on a draft of this report, a change has been approved requiring federal supply class information to be included in transportation documentation. In addition, the Organization of the Joint Chiefs of Staff is addressing the practical aspects of monitoring critical items in JDS. Until agreement is reached on

what information is needed, how to obtain it, and an information link between logistics systems is operational, JDS will be unable to automatically monitor critical resupply items as intended.

Coordinating the Return of Evacuated Personnel

Concurrent with troop deployment, decisions must be made on the use of space in returning aircraft and ships. Noncombatants are evacuated primarily on a space available basis and compete for airlift and sealift space with medical evacuees and with equipment being returned to depots for repair and reissuance to the field.

The need for monitoring and coordination can be seen in results of PROUD SABER, a 1982 joint mobilization and deployment exercise. According to the exercise's report, as a result of the lack of coordination and control, thousands of exercise evacuees were moved more than once and thousands more spaces than required for evacuees were generated. A central point for coordinating and controlling these movements, such as JDA, could have helped reduce this duplication. However, JDA has not yet decided how such coordination and control will be carried out and has not developed a JDS capability for doing so.

Lack of Authority Limits JDA's Ability to Do Its Job

JDA was tasked to develop, administer, and operate a flexible and responsive Joint Deployment System to provide the information needed to effectively manage the deployment process. But JDA cannot direct other services, agencies, or commands to take actions to support JDS development; it must rely on voluntary cooperation from the deployment community.

JDA is an agency of the Joint Chiefs of Staff. Yet, the Joint Chiefs have no direct operational authority and cannot, therefore, direct how certain things will be done within the services. Rather, they serve as advisers to the President and the Secretary of Defense, prepare joint logistic and strategic plans, and provide overall policy guidance and recommendations to the services. Consequently, JDA, as a "coordinating authority" for the Joint Chiefs, can require consultation between the services on a particular deployment coordination issue but cannot require that (1) the community reach agreement on the requirements of the system, (2) the services develop the needed automated systems, or (3) the services interface systems which are necessary for JDS to be fully operational.

A 1980 mobilization and deployment exercise, PROUD SPIRIT, clearly identified JDA's authority problem. An evaluation report by the Systems

Research and Applications Corporation concluded that JDA lacked both the authority and the resources to accomplish its tasks. It also concluded that JDA needed more guidance from the Joint Chiefs and the Joint Staff regarding its mission and greater authority and resources to get its job done. Also, an April 1981 Joint Chiefs of Staff Detailed Analysis Report on the exercise concluded that while JDA operations depended totally on timely reporting by the deployment community, JDA lacked the authority to enforce deployment community compliance with the JDS reporting procedures.

According to JDA's charter, it is responsible for specifying JDS information and interface requirements. As shown, JDA has identified systems which it believes should be interfaced with JDS. But while JDS' full operational capability depends upon data from other systems, JDA has no authority to ensure the quality or currency of the data it receives or to ensure that specified systems are interfaced with JDS. These decisions rest with individual community members. Examples of situations where JDA's lack of authority and community members' lack of cooperation were found were in problems in obtaining system interfaces and information regarding computer capacity and personnel needs. In addition, training was performed on an ad hoc basis during system development.

Reluctance to Allow Interface

Some members are reluctant to allow interface between their data systems and JDS. For example, MAC officials have not yet agreed to a permanent JDS/Military Air Integrated Reporting System (MAIRS) interface which would provide aircraft departure and arrival information as it occurs. MAC questions JDS' need for this information, stating that aircraft movements need be reported only if they deviate from previously established schedules. MAC officials told us they have agreed to a temporary interface during an exercise but the agreement does not extend beyond the exercise. This reluctance to establish interfaces is considered by JDA to be one of the most difficult issues it faces.

Several community members indicated that this reluctance is based not only on technical questions but also on concern for perceived encroachments on the chain of command. That is, concern exists that command decisionmaking authority could be circumvented if detailed information is available at higher levels.

Another example is the interface with the Army's Transportation Coordinator Automated Command and Control Information System

(TC ACCIS). In 1983, JDA determined that it would be beneficial to interface this system with JDS when TC ACCIS becomes operational, since it would provide current and detailed information on personnel and equipment to be moved. However, Army Headquarters questioned not only the need for a direct interface but also the management role of JDS in deployments. The Army viewed the interface as potentially bypassing major service commands. At the completion of our review, there was no agreement on an interface when TC ACCIS becomes operational.

Cooperation Lacking in Determining Computer Capacity

JDA conducted two internal studies to determine if JDS user sites had sufficient computer capacity to operate JDS during an exercise or a crisis. The first study, completed in March 1984, was conducted to determine whether all 17 JDS sites would have the capacity to successfully operate JDS along with other competing demands for existing WWMCCS and command-specific applications. It identified anticipated computer requirements needed to support a fully operational JDS, along with information on each site's projected capacity. The second study, an update of the first, was also intended to resolve concerns about WWMCCS' ability to handle JDS, JDS data base storage requirements, and the priority of JDS applications versus other applications. This study contained an analysis of JDS storage impacts at each site.

In the March 1984 study, JDA reported the amount of data storage required by JDS at each of the 17 operational sites. However, although JDA officials were aware of the storage capacity at each site, they did not know, and had no authority to independently determine, each site's total requirements considering all systems, including JDS. JDA concluded, therefore, that each site should determine the cumulative impact of JDS requirements when added to capacity requirements of other systems using the same hardware, such as requirements for existing WWMCCS and command-specific applications. But JDA did not specifically request feedback on the results of these site assessments, and, according to a JDA official, it received little response from the community to this report.

Following a system change to JDS, which expanded the data storage requirements for the JDS, JDA issued a second study of individual site capacity requirements to support JDS in June 1985, and reported the results to the community. This time, in addition to requesting that members assess their individual data storage capacity relative to demands from all systems, it also requested that the community inform JDA of the results. A JDA official told us that JDA received little response from the community and that most of the response it did receive was informal.

Subsequently, JDA officials discussed capacity requirements at community meetings and, according to DOD, general agreement exists about JDS computer capacity requirements. However, JDA officials stated that the issue of whether or not all sites have sufficient computer capacity to operate JDS given competing demands has not been resolved.

Personnel and Training Issues

The need for community members to provide more personnel to adequately staff JDS was emphasized by the Deputy Secretary of Defense in 1982 when he approved the plan to accelerate JDS development. In a letter dated November 2, 1984, the Director, JDA, requested that the community members take actions to obtain dedicated personnel for JDS operations and advise him of those actions by December 1984. He received no responses.

At a meeting of senior level community officials in December 1984, the Director again emphasized the urgency of the manpower issue. At that time, community members agreed that, with few exceptions, no dedicated JDS personnel had been authorized or assigned at any site other than JDA.

The community officials recommended that since JDS would be used all the time and not just when contingencies arise, community members should determine their manpower requirements to support the system and ensure that their requirements were specified in the fiscal years 1987-91 budget submission.

After additional follow-up by JDA, all joint commands responded and in total requested 33 personnel to be dedicated to maintain and operate JDS. These requests went to the Joint Chiefs of Staff where the Operations Deputies agreed to make available 21 of the 33 requested positions. At the completion of our review, 16 of 24 commands had determined that they had a combined need for 75 officers, enlisted, and civilian personnel. The other 8 commands stated they had no additional needs. According to a JDA official, the earliest date the requested personnel could actually become available to JDS is October 1986.

Once personnel are available, they must be trained to use the system. While JDA was charged with primary responsibility to train community personnel in JDS' use, the former Director of JDA did not believe that it was JDA's permanent role to provide training to system operators and

formed an ad hoc training branch by tasking military personnel to perform training duties in addition to their normal operations duties. Subsequently, through a reorganization of JDA, a permanent training staff was established within the newly formed Exercise, Operations and Training Branch.

In commenting on a draft of this report, DOD reiterated its support for its requirement that JDA conduct system training. DOD further stated that other agencies cannot provide the same level of expertise and experience necessary to support this training effort.

Comments From the Assistant Secretary of Defense (Acquisition and Logistics)

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-8000

ACQUISITION AND LOGISTICS

LM-TP

16 APR 1986

Mr. Frank C. Conahan
Director, National Security and
International Affairs Division
United States General Accounting Office
Washington, D. C. 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) Draft Report entitled "DEPLOYMENT: Management Improvements Needed For Joint Deployment System Development," dated February 28, 1986 (GAO Code 393054; OSD Case No. 6959).

See comment 1.

While the report is largely accurate in its historical portrayal of issues surrounding the Joint Deployment System (JDS) development, significant progress has been achieved since the GAO completed its field work on this report in January, 1985. A majority of the recommendations are therefore outdated in terms of initiatives that have been taken to correct problem areas. The report fails to give the reader any indication of the significant progress made by the Joint Deployment Agency (JDA) or of the effectiveness of existing procedures to resolve contentious issues. Currently the JDS provides a much improved rapid planning capability over that which existed during exercise "Nifty Nugget-78" - which prompted establishment of JDA and development of the JDS.

See comment 2.

The major DoD concern with the report is the inference in the GAO findings that a new system, JOPES, is being planned before resolution of the JDS problems and that the problems in JDS implementation will be repeated in the implementation of JOPES. Specific concerns in this area are detailed in the DoD response to Finding I, attached.

Detailed DoD comments on the findings and recommendations contained in the GAO Draft Report are attached.

Sincerely,

for James P. Wade, Jr.

Attachment

GAO DRAFT REPORT - DATED FEBRUARY 28,1986
(GAO Code 393054) - OSD CASE 6959

"DEPLOYMENT: MANAGEMENT IMPROVEMENTS NEEDED FOR JOINT SYSTEM DEVELOPMENT"

DEPARTMENT OF DEFENSE COMMENTS

FINDINGS

FINDING A: No Agreement On Total Information Needs And Interface Problems Exist. The GAO noted that the Joint Deployment Agency (JDA) was established by the Joint Chiefs of Staff (JCS) in 1979 (1) to coordinate and monitor the planning for, and actual deployment of, U.S. Forces, and (2) to develop, by the end of FY 1985, an operational joint deployment system to provide the information needed to effectively manage the deployment process. The GAO noted that through FY 1984, the JDA had spent about $42.3 million to develop the system, referred to as the Joint Deployment System (JDS), and that total development costs for all joint deployment community members 1/ , including the JDA, are projected to be $171.1 million through 1991. According to the GAO, the JDS consists of a complicated network of people, procedures, communication capabilities, and data processing equipment to support deployment; and it is a part of the Worldwide Military Command and Control System (WWMCCS), designed to interface with other systems to provide information for planning, coordinating, and monitoring troop deployments. The GAO found that deployment planning is a complex process and in a crisis, planning must be done quickly to ensure that U.S. Forces are mobilized and deployed in time to safeguard national interests. The GAO concluded that JDA has taken actions to improve the nation's ability to plan for deployment during a crisis. The GAO further concluded that completion of an automated system, such as JDS, is critical to providing

1/ For purpose of the summary, the GAO definition of the Joint Deployment Community (referred to in this summary and in the GAO draft report as the "community") will be used for consistency. Therefore, the community consists of those headquarters, commands, and agencies involved in preparation, movement, reception, employment, support, and sustainment of military forces assigned or committed to a specific operation of the Joint Chief's of Staff, the Services, certain Service logistics commands, the Defense Logistics Agency, the transportation operating agencies, JDA, and other DoD agencies, as may be appropriate to a given operation plan.

Attachment

decision making information to the supported community, the JCS and the National Command Authority (NCA) during a crisis. The GAO found, however, that although JDA reached an agreement (as required by DoD standards) within the community in April 1985, on the functional description of the JDS, no agreement exists on (1) what information should be included or is needed in the JDS, or (2) how the JDS will interface with, or obtain information from, other systems. In addition, the GAO found that disagreement continues between the JDA and community members on the level of detail the system should contain, and that the functional description does not reflect any agreement on which systems will be interfaced with JDS. Instead, the functional description states that JDS information needs vary by user and there is no consensus within the community on the level of detail required in the system. The GAO further found that, of the 14 community information systems identified by the functional description, the JDS only has interface with seven systems, has an agreement to test one of the remaining seven, and the other six systems are being developed or are being updated -- four of these are not scheduled to be completed for at least another 1-3 years. The GAO concluded that the JDS cannot be completed until the community resolves its disagreements on the information to be provided to and by the system. (P.1, pp.4-5, p.8, pp.22-27, Appendix I/GAO Draft Report).

Now on pp. 1-4 and 16-19.

See comment 1

DOD RESPONSE: Concur. Since the GAO completed its field work in January, 1985, significant progress has been achieved on agreement of the vast majority of the information needs of JDS and in correcting interface problems that existed at that time. The Joint Deployment System (JDS) Functional Description (FD), which was effective in April, 1985, established limits on the level of detail permissible within the system. There remains however no unanimity among the community as to the level of detail required in JDS in specific cases (e.g., to support reception planning), given varied community needs and the availability of that data in other operational systems. Lack of total agreement on all information needs is not necessarily a problem. End-users such as CINCs for example, while organizationally similar, have very distinct requirements based upon their theaters and concepts of operations. Significant progress has also been achieved in development of the interfaces listed in Table I-1, pages 29 and 30. All Services and TOAs are working on automated systems and their interfaces to JDS. Both MAC and MSC, for example, have recently identified data that will help them better schedule their limited lift assets.

See comment 3.

Now on pp. 20 and 21.

See comment 4.

o FINDING B: Delays In Developing Transportation Information Systems. The GAO found that the key automated planning systems being developed by two of the three Transportation Operating Agency's (TOA) are in the early stages of system design and will not be able to provide timely information to the JDS in crisis situations, when transportation plans must be revised or developed quickly, until at least 1989. The GAO concluded that this situation exists, in large part, because of delays in 1981,

caused by development restrictions imposed by DoD in response to a congressional report. (p. 6, p. 23, pp.31-32, Appendix I/GAO Draft Report).

Now on pp. 3, 16 and 21-22

Now on pp. 20-21

DOD RESPONSE: Concur. As indicated in the GAO report (pg. 30), efforts are now ongoing to estimate milestones for the automation of the capture/transmission of transportation information for JDS. As GAO recognized in its report, the congressionally mandated moratorium in 1981 resulted in a two year delay in system development efforts in MTMC and MSC.

o FINDING C: Commanders May Not Be Able To Rapidly Develop Plans During Crises. The GAO found that the JDS does not have the capability to allow commanders to quickly develop, revise, evaluate, and select an appropriate operation plan for mobilizing and moving troops to an area of conflict in a situation where no existing plan will suffice, because the subsystems supporting this effort are not complete. Specifically, the GAO found that the Force Module System and the Mode Optimization and Delivery Estimation System (MODES) model will not be fully capable of supporting crisis planning until (1) all Services complete their force modules and identify specific units assigned to them and (2) MODES is fully operational and field tested. (p. 23, pp.32-34, Appendix I/GAO Draft Report).

Now on pp. 16 and 22-23

See comment 5

DOD RESPONSE: Partially concur. JDS provides a much improved rapid planning capability over that which existed during exercise "NIFTY NUGGET 78." However, the capability to rapidly develop plans in the absence of MODES will depend upon the size of the contingency force (i.e., small force deployments may not require MODES). During a recent emergency, for example, current JDS software provided the capability to rapidly develop a contingency plan and courses of action were developed on line in JDS. Rapid plan capability will further improve with implementation of the Mode Optimization and Delivery Estimation System (MODES). MODES is currently undergoing developmental testing and a demonstration/assessment is planned with the community in May 1986. Corrections will be made based upon community feedback which will then be followed by a formal operational test and evaluation (OT&E). The DoD disagrees that it will not be possible to react rapidly in emergency situations because service force modules have not identified the specific units assigned to them. By definition, these modules contain type units, not specific units. They are designed to provide CINCs a basis against which to tailor force requirements. The concept is designed to improve speed and content of requirement definition, not to permanently identify actual units to be used in a specific situation. Which units to use in what situations is a decision dependent on many variables. The number and complexity of these variables makes the GAO's assumption that specific units should be identified against force modules unsound.

See comment 6

o FINDING D: Monitoring Critical Resupply Needs. The GAO found that the procedures and capabilities have not been developed to

Now on pp. 16 and 23-24.

refine supply requirements. While the JDA has discussed requirements for identifying and monitoring resupplies, the GAO found that no agreements have been reached on what information is needed or how to obtain it. The GAO concluded that the JDS cannot be completed until JDA develops the ability to monitor and coordinate the movement of critical supplies. (p.8, p. 23, pp. 34-35, Appendix IGAO Draft Report).

DOD RESPONSE: Concur. This was recognized in JDS FD as an enhancement to be addressed after the post-baseline JDS system was fielded in April, 1985. Actions are underway to resolve this. A Military Standard Transportation and Management Procedures (MILSTAMP) change has been approved that requires Federal Supply Class (FSC) information be included in transportation documentation. In addition, the Joint Deployment Agency (JDA) is working with the Air Force Logistics Command to test a prototype interface to the Enhanced Transportation Automated Data System (ETADS) that will give FSC intransit visibility. OJCS(J-4) is currently addressing the practical aspects of monitoring critical items in the JDS.

Now on pp. 16 and 24.

o FINDING E: Coordinating The Return Of Evacuated Personnel. The GAO found that procedures and capabilities have not been developed to coordinate and monitor the return of casualties and non-combatants. The GAO observed that, concurrent with troop deployment, decisions must be made on the use of space in returning aircraft and ships. The GAO noted that, currently, noncombatants are evacuated primarily on a space available basis and compete for aircraft or sealift space with medical evacuees and with equipment being returned to depots for repair. The GAO concluded that the JDS cannot be completed until the JDA develops the ability to monitor and coordinate the return of casualties and noncombatants. (p.8, p. 23, p. 35, Appendix I/GAO Draft Report).

DOD RESPONSE: Concur. This item is also recognized in JDS FD as a post-baseline enhancement. It should also be recognized that the policy issue with respect to non combatants is not unique to JDS and must be addressed by multiple agencies having responsibilities for evacuation policy.

o FINDING F: Lack Of Authority Adds To Problems. The GAO found that compounding the JDA's problems in developing the JDS is its lack of authority to direct community members to take actions to support JDS development. The GAO additionally found that as a "coordinating authority" for the JCS, JDA can require consultation between the Services on particular deployment coordination issues, but cannot require (1) the community to reach agreement on the requirements of the system, (2) the Services to develop the needed automated systems, or (3) the Services to interface systems necessary for the JDS to be fully operational. In addition, GAO found JDA's lack of authority has enabled questions about the method of training to support the

4

system to remain unresolved. The GAO also found that some members are reluctant to allow interface between their data systems and JDS. For example, the GAO noted the reluctance of the Military Airlift Command to interface on aircraft departure and arrival information as it occurs--i.e., taking the position that aircraft movements need be reported only if they deviate from previously established schedules. The GAO concluded that this reluctance to establish interface is considered by JDA to be the most difficult issue it faces. The GAO further concluded that, because of the Joint Chief of Staff lack of authority to (1) resolve disagreements between community members and (2) require actions which support JDS development, increased involvement by the Office of the Secretary of Defense, including specific guidance and direction, is now critical. The GAO finally concluded that this guidance and direction is needed to (1) resolve community disputes over the information to be provided to and by JDS, and (2) ensure that the capabilities needed by the community are completed in a timely manner, including specific timeframes when agreements must be reached and actions taken. (p. 6, p. 8, pp. 22-27, Appendix I/GAO Draft Report).

Now on pp. 3-5, 16 and 24-28.

See comment 7

DOD RESPONSE: Nonconcur. The DoD disagrees that the lack of authority was the cause for the problems identified by the GAO. This issue was not one of lack of directive authority, but rather the lack of detailed requirement statements against which to develop specific interfaces (e.g., not all CINCs concur with the use of JDS in execution for detailed reception planning). The Joint Chiefs of Staff serve a valid role in resolving these issues. Considerable progress is being made towards this end (see DoD response to Finding A.). The JDA is the designated executive agent for the JCS for executing this program, including the training mission. In light of the significant improvements that have occurred since the GAO did its on-site audit work, additional OSD guidance is not required at this time.

See comment 1.

o FINDING G: Cooperation Lacking In Determining Computer Capacity. The GAO found that JDA conducted two studies to determine if JDS user sites have sufficient computer capability to operate JDS during an exercise or in a crisis. The GAO found the results of the first JDA study reported in March 1984, revealed the amount of storage required at each of the 17 operational sites; however, JDA had no authority to determine each site's total requirements considering all systems, not just JDS. According to the GAO, JDA concluded that each site should determine the cumulative impact of JDS requirements when added to capacity requirements for other systems using the same hardware, such as the WWMCCS system. The GAO found, however, that JDA did not request feedback on the results of these site assessments and received little response from the community on this first report. The GAO found that the second study, reported in June 1985, also reviewed capacity requirements, but this time requested community members to assess storage demands from all systems and inform JDA

Now on pp. 26-27.

See comment 8.

of the results. The GAO noted that at the conclusion of its review, JDA had only received little response from the community, and most of that was informal. The GAO also noted that JDA officials intend to discuss the issue of capacity at future community meetings, in an effort to try to resolve this problem. (pp. 38-39, Appendix I/GAO Draft Report).

DOD RESPONSE: Partially concur: While it is true that initially there were problems in obtaining some of the information, DoD disagrees with the implied total lack of cooperation in determining computer capacity. As a result of continuing cooperation, and continuing technical exchanges between JDA and the user community, general agreement now exists about JDS computer capacity requirements.

Now on pp. 27-28.

See comment 9.

o FINDING H: Personnel And Training Issues: The GAO found that since 1982, when the Deputy Secretary of Defense approved the plan to accelerate JDS development, the JDS has had difficulty obtaining the staff necessary to support its operations. The GAO also found that, although additional staff were recently requested to maintain and operate the JDS, the earliest date the personnel could actually become available to JDS is October 1986, or one year after the date JDS was to become fully operational. Finally, the GAO found that once personnel are available, they must be trained to use the system, and the JDA is charged with the primary responsibility to train community personnel in JDS use. The GAO found, however, that JDA does not have staff dedicated to the training function; instead, the training is performed on an ad hoc basis by those already assigned operational duties. The GAO noted that JDA officials believe that training should be performed by some other activity, such as the National Defense University. (pp. 39-41, Appendix I/GAO Draft Report).

DOD RESPONSE: Partially concur. The DoD disagrees that there were unusual problems in obtaining personnel for the accelerated JDS development approved in 1982. In addition, JDS manpower requests have been consistently supported within the limits of existing resource constraints. It is true that the additional staff requested in 1985 will not be available to JDS until Fiscal Year 1987. The arrival of these additional personnel therefore will not occur until after JDS is operational due to the late submission of additional manpower requirements. The requirement for JDA to conduct system training is stated in their TOR and is not incidental to the mission. The JDA currently has staff dedicated to training but we agree that additional staff is needed. It is the DoD position that other agencies (such as NDU) cannot provide the same level of expertise and experience necessary to support this training requirement.

See comment 10.

o FINDING I: New System Planned Before Resolution Of JDS Problems. The GAO found that the successful and timely

Now on pp. 4 and 12.

See comment 2.

resolution of JDS problems is important, not only for the completion of the JDS, but also for the development of the Joint Operation Planning and Execution System (JOPES), which will build on and eventually replace the JDS. The GAO also found that JOPES, planned to be fully functional by the 1990's, will monitor all four phases of military operations-- mobilization, deployment, force employment and sustainment. The GAO concluded that the JOPES will incorporate automated capabilities to provide more timely and accurate decisionmaking information relative to mobilizing troops, employing them in conflicts, and sustaining their operations with required supplies and equipment. The GAO further concluded that due to the lack of JCS authority, it is critical that the Secretary of Defense provide specific guidance and direction to ensure that the problems encountered in developing JDS are not repeated in JOPES. (pp. 6-9, pp. 16-17, Appendix I/GAO Draft Report).

DOD RESPONSE: Nonconcur. The DoD disagrees with the inference in the GAO findings that a new system is being planned before the resolution of JDS problems and that the problems in JDS implementation will be repeated in the implementation of JOPES. In September, 1985, JDS fielded a baseline capability for deployment planning and monitoring. This baseline will continue to be enhanced to improve near-term capabilities not available from any other system. JOPES will integrate JDS and other deployment planning systems in a phased developmental approach designed to capitalize on technological improvements provided by new hardware and system software. The integrated deployment capability is scheduled for the first increment of JOPES and requires planning actions begin now. Follow-on increments of JOPES will support mobilization, sustainment, and employment information needs and will be much wider in scope than current planning systems. There is no need to wait for JDS to be fully developed before beginning to work on these areas. The JOPES management structure has assigned office of primary responsibility (OPR) to a OJCS directorate. A major difference between JOPES and JDS development is the early-on approval of JOPES requirements and implementation of a formal JOPES management structure within OJCS. This reflects the major lesson learned from JDS development. JOPES development has and will continue to benefit from the progress and lessons learned from development of JDS. Numerous actions to gain community agreement on what capabilities JOPES is to provide have been undertaken. The JOPES Required Operational Capability (ROC) has been coordinated and approved by the Services and OJCS. In addition to the JOPES ROC, the functional capability to be provided by the first increment of JOPES has been documented in the JOPES Increment 1 FD currently being staffed for OJCS and Service approval. A data requirements document, identifying what data and level of detail for those data, has also been prepared and will be staffed. Rigorous data administration policies and procedures have been established for JOPES and should result in a systematic, standardized, and coordinated development process.

These steps should provide a basis for consensus regarding information requirements and data access.

RECOMMENDATION

o RECOMMENDATION: To ensure that the disagreements among community members on information which a deployment system, such as JDS, should provide and system interfaces are resolved at the earliest possible time, the GAO recommended that the Secretary of Defense

--establish firm milestones for the ultimate users--the Joint Chiefs of Staff and the supported commanders--to complete establishment of their information needs;

--emphasize to supporting commands and agencies the need for them to provide the required input and support; and

--establish a mechanism for promptly resolving disagreements as they arise.

See comment 11.

DOD RESPONSE: Partially concur. The DoD agrees that the objectives included in this recommendation are desirable and actions are already in place to accomplish them. In January, 1985, in recognition of some of the problems addressed in this report, the Deputy Secretary of Defense directed the JCS to establish a joint flag/general officer steering group to oversee system development and ensure total system balance and compatibility. This included: (1) correcting the inadequacies in the ADP software used by the transportation operating agencies (TOAs) and operational commands that hinder the movement of forces; (2) developing an adequate interface between the surface TOA systems (MSC and MTMC); (3) developing an effective interface between the Joint Deployment System (JDS) and the TOAs; and (4) bringing on-line automated systems that support timely sequential planning. The steering group was also tasked to examine relationships between the JDA and the TOAs to ensure that DoD will have an effective peacetime to wartime transition. Progress reports to the Deputy Secretary of Defense are required every six months until required systems are operational and adequate coordination mechanisms are fully in place. The most recent progress report indicates that the steering group has reviewed the ADP systems in use and under development by the TOAs to assure they will interface with one another and with the JDS. This review helped determine the critical points in the system development and interface process so that management attention can be focused where needed to keep the efforts on track. The steering group reported that with respect to the interface of MSC and MTMC transportation ADP encouraging progress has been made. The commands are working in close harmony and have divided their ADP requirements into management systems and strategic planning systems to facilitate joint development. They have identified areas where data bases will be shared and updated by both

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commands and have agreed on the media to be used, the frequency of data update, security level, and milestones for systems development. The steering group has contracted with the Transportation Systems Center of the Department of Transportation for technical help in evaluation and review of the entire program which should provide an unbiased outside assessemnt of progress. The steering group systems review highlighted the need to examine the interfaces of all TOA systems with the JDA. As a result, the group is aggressively pursuing methods to resolve difficulties in incorporating additional airlift detail data needed by MAC into the JDS. The steering group is also tracking service funding support as the delay or lack of funding in one TOA's program would affect the development and fielding of the other's. OSD involvement in JDS and JOPES development will continue in the area of resource assistance for necessary systems and interfaces. Continued emphasis in appropriate OSD documents (e.g., Defense Guidance) also supports development efforts. Further OSD guidance does not appear necessary at this time.

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The following are GAO's analysis of the Assistant Secretary of Defense comments.

GAO Comments

1. Our field work was completed in November 1985. The draft report and, in fact, DOD's comments on our draft refer to actions taken and documents issued after January 1985. Subsequent to receiving DOD's comments, a DOD official acknowledged the error concerning the recency of our work. Further, in the draft report and in this report we have acknowledged the progress which has occurred since NIFTY NUGGET 78. The first two pages of our draft and early section of appendix I discussed JDA's progress. We also believe the report addresses the effectiveness of the way in which contentious issues have been handled and the issues which have not been resolved. For example, it took 5 years to obtain an approved functional description and even now, no agreement exists on total information needs.

2. In response to DOD's comments, we have modified our report to eliminate any unintended inference that JDS problems would likely be repeated during the development of JOPES. Our Information Management and Technology Division is currently reviewing DOD's Worldwide Military Command and Control System, of which JOPES is to be a part, and will be following progress of the system.

3. DOD instructions for automated data system development require early agreement on total information needs. JDA did not obtain this agreement as required by DOD.

4. We have made changes to Table I-1 as appropriate. These include (1) reducing the number of interfaces achieved from seven, as we reported in our draft, to six, and (2) indicating 2 years later for completion of a system under development. The difference in number of interfaces resulted from our counting an interface with JOPS as an indirect interface, whereas DOD more appropriately did not. We have also revised dates in the table to reflect changes in plans and estimates since November 1985.

5. While JDS provides an improved planning capability over that which existed during exercise NIFTY NUGGET 78, according to DOD officials, the recent emergency referred to was very limited in complexity compared to the type of situation for which the rapid plan capability is being developed. We do not believe that the successful development of a course of action in an event of limited complexity is a demonstration of

the type of rapid plan capability generally foreseen as necessary. Further, DOD agreed that a commander's capability to rapidly develop plans during a crisis for a complex, large-scale deployment for which there is no plan, is limited without MODES.

6. We agree that service force modules were not designed to permanently identify specific units assigned. However, a second type module—an operation plan-dependent module—is designed to identify specific units assigned to support individual operation plans and when complete, should better enable the logistics community to provide realistic sustainment support. According to the Joint Chiefs of Staff Force Module Implementation Plan, no approach to rapid planning can be judged complete without adequate logistics planning. Our draft referred to the second type module; however, to avoid possible confusion with service force modules, we have deleted reference to the specific modules and units assigned, while recognizing in the definition of a force module that two types exist.

7. Our report documents lack of cooperation and questions related to the effect on the chain of command of providing certain information to JDS. This is more than a lack of detailed requirements for the system which DOD states is the cause of JDS' developmental problems. As a result, we continue to believe the Joint Chiefs' and JDA's lack of authority to resolve disagreements and obtain cooperation has adversely affected JDS development and has the potential to continue to affect system development.

8. We have modified our report to show that, according to DOD, general agreement has been reached regarding the computer capacity required. However, there is still no resolution of the issue of capacity given competing demands.

9. We do not question DOD's support for JDS manpower requests. The former JDA Director had problems gaining the community's cooperation to identify their needs and to submit their manpower requests. However, the fact remains that even with DOD's support for additional manpower, delays were experienced in obtaining dedicated personnel.

10. We have revised the report to reflect JDA's reorganization which provided dedicated training staff and DOD's position that other agencies cannot provide the same level of expertise to support the training requirement.

11. While DOD has taken actions to provide increased oversight by setting up a steering group and requiring it to submit progress reports to the Deputy Secretary every six months until required systems are operational, these actions do not, by themselves, ensure that the ultimate users will establish firm milestones indicating when they will agree on the level of detail to be included in the system and when interfaces needed for the system will be completed. The steering group is comprised of various flag/general officers representing affected community members. However, the group does not have the authority to resolve disagreements among themselves when concensus cannot be reached on information needs and directions needed to oversee system development. These disagreements must be elevated through the respective chains of command for resolution.

In addition, although DOD states that the steering group has set milestones for systems development, no agreement exists on interfaces for 8 of the 14 systems. Thus, we continue to believe milestones are needed for these areas.

We modified our recommendation concerning emphasizing the need for supporting commands and agencies to provide the required input and support since the Office of the Secretary of Defense has taken an initial step to emphasize its concern by requiring progress reports on system development. However, our modified recommendation recognizes there is no assurance that the steering committee will report at the earliest reasonable time any disagreements or lack of cooperation which could affect JDA's capability to meet the milestones established.

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